

## Exercise 5

### 1 Transparent Bridges on Spanning Tree

Consider the below LANs. Assume host  $a$  and  $b$  are on LAN1,  $c$  on LAN2 and  $d$  is on LAN8. Initially, hash tables in all bridges are empty and the below spanning tree is used. Show how the hash tables of different bridges change after each of the following events happen in sequence and on which LANs the frames show up:

1.  $a$  sends to  $d$
2.  $c$  sends to  $a$
3.  $d$  sends to  $c$
4.  $d$  moves to LAN6
5.  $d$  sends to  $a$

### 2 Spanning Tree

One consequence of using spanning tree to forward frames in an extended LAN is that some bridges may not participate at all in forwarding frames. Identify these bridges in the spanning tree above. Is there a reason for keeping these bridges, even though they are not used for forwarding?

### 3 Transparent Bridges

Assume the number of hosts on an LAN exceeds the capacity of the bridge hash table.

1. Does this cause problems?
2. Should the bridge override existing entries or ignore the new ones?